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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/075,021	02/12/2002	James J. Finley	1074D2	8098

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P P G INDUSTRIES, INC.
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PITTSBURGH, PA 15272

EXAMINER

PIZIALI, ANDREW T

ART UNIT	PAPER NUMBER
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1775

3

DATE MAILED: 06/18/2002

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/075,021

Applicant(s)

FINLEY ET AL.

Examiner

Andrew T Piziali

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 February 2002.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 21-43 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 21-43 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☒ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other:

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 39-40 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 39, the applicants claim that the metal oxide film has a thickness ranging from 40-120Å, but it is unclear which metal oxide film possesses the claimed thickness. Claim 39 is dependent on claim 38, which is in turn dependent on claim 36. In claim 36 the metal film is thermally oxidized resulting in a metal oxide film. In claim 38 a metal oxide film is deposited on the metal film prior to thermal oxidation. Therefore, it is unclear if the metal oxide film with the claimed properties is the metal film that is thermally oxidized or is the metal oxide film that is deposited on the metal film prior to thermal oxidation.

Regarding claim 40, the applicants claim that the density of the metal oxide film is 4 gm/cc and the refractive index of the metal oxide film is 2.5, but it is unclear which metal oxide film possesses the claimed properties. Claim 40 is dependent on claim 38, which is in turn dependent on claim 36. In claim 36 the metal film is thermally oxidized resulting in a metal oxide film. In claim 38 a metal oxide film is deposited on the metal film prior to thermal oxidation. Therefore, it is unclear if the metal oxide film with the claimed properties is the metal film that is thermally oxidized or is the metal oxide film that is deposited on the metal film prior to thermal oxidation.

Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 21-24 and 27-35 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 4,522,844 to Khanna et al.

Regarding claims 21-24 and 27-35, Khanna discloses a coated product comprising a substrate and a film sputtered from a metal target in an atmosphere comprising inert gas and reactive gas resulting in a metal film having an amorphous structure (column 1, lines 28-52, column 2, lines 33-44, column 3, lines 31-33).

It is the examiner's position that the coated product of Khanna is identical to or only slightly different than the claimed coated product prepared by the method of the claim(s). Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show obvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). Khanna either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should

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clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with Khanna.

Regarding claims 22-24 and 32, Khanna discloses that the metal of the metal target may be titanium (column 1, lines 53-63).

Regarding claims 27-28 and 31, Khanna discloses that the reactive gas may be oxygen (column 3, lines 31-33).

Regarding claims 29-30, Khanna discloses that the inert gas may be argon (column 3, lines 31-33).

Regarding claims 32 and 35, Khanna discloses that the substrate may be glass (column 1, lines 34-35).

Regarding claims 33-34, Khanna discloses that the films may be deposited in pure argon (column 3, lines 31-33) and discloses that oxygen may be present at 2 to 15 percent (column 4, lines 9-18).

5. Claims 21-25 and 27-43 are rejected under 35 U.S.C. 102(b) as being anticipated by US Patent No. 5,110,662 to Depauw et al.

Regarding claims 21-25 and 27-43, Depauw discloses a multi-layer structure wherein an initial metal film is sputter deposited in an inert atmosphere with an optional reactive gas (column 2, lines 56-63) on a substrate and receives subsequent deposits of oxide films (column 3, lines 12-35 and column 5, lines 8-35) resulting in a corrosion resistant article (column 3, lines 12-18). Depauw does not specifically mention that the metal film is amorphous, but Depauw discloses that the metal may be deposited in a sub-oxide or even metallic state (column 4, lines 67-68 and column 5, lines 1-7). Considering that the metal film may be deposited in sub-oxide

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or metallic state, it appears that the oxygen content is sufficient to effect the deposition in a substantially amorphous rather than crystalline state. Absent a showing of otherwise, it appears that the metal film of Depauw is amorphous in structure.

It is the examiner's position that the coated product of Depauw is identical to or only slightly different than the claimed coated product prepared by the method of the claim(s). Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show obvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). Depauw either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the present invention are commensurate in scope with the claims and how the Comparative Examples are commensurate in scope with Depauw.

Regarding claims 22-24, 32 and 40-43, Depauw discloses that the metal of the metal film may be titanium (column 3, lines 19-35).

Regarding claim 25, Depauw discloses that the thickness of the metal film is preferably in the range of 20-150 Å (column 8, lines 10-28).

Regarding claims 27-28, 31 and 43, Depauw discloses that the reactive gas may be oxygen (column 2, lines 56-63).

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Regarding claims 29-30 and 43, Depauw discloses that the inert gas may be argon (column 2, lines 56-63).

Regarding claims 32, 35, 40 and 43, Depauw discloses that the substrate may be glass (column 1, lines 16-27).

Regarding claims 33-34, Depauw discloses that the metal may be deposited in a sub-oxide or even metallic state (column 4, lines 67-68 and column 5, lines 1-7), but does not mention the specific oxygen content. Considering that the metal film may be deposited in sub-oxide or metallic state, it appears that the oxygen content is sufficiently low to effect the deposition in a substantially amorphous rather than crystalline state. Absent a showing of otherwise, it appears that the oxygen content ranges from 2 to 15 percent

Regarding claim 36 and 43, Depauw discloses that the metal film is thermally oxidized (column 5, lines 3-7 and column 8, lines 10-28).

Regarding claim 37, Depauw does not disclose the specific heat treatment temperature, but considering that Depauw discloses that the glass is heated for a bending treatment and/or tempering treatment, it appears that the article is heated to a temperature of at least 400C.

Regarding claim 38, Depauw discloses that an oxide film is deposited on the metal film prior to thermal oxidation of the metal film (column 5, lines 8-35).

Regarding claim 39, Depauw discloses that the titanium oxide film preferably has a thickness ranging from 20-140A (column 8, lines 37-41).

Regarding claims 40-43, Depauw discloses that the metal oxide film may comprise titanium (column 5, lines 8-20). Considering that Depauw discloses that the metal may be deposited in a sub-oxide or even metallic state (column 4, lines 67-68 and column 5, lines 1-7), it

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appears that the oxygen content is sufficiently low (in an essentially nonreactive atmosphere) to form a titanium oxide film with a density of 4 grams/cc. Depauw also fails to mention the refractive index of the metal oxide film, but considering the substantially identical method of making the film, compared to the applicants' method, it appears that the metal oxide film would possess a refractive index of 2.5.

Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 21-43 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,110,662 to Depauw et al. in view of US Patent No. 4,522,844 to Khanna et al.

Regarding claims 21-43, Depauw discloses a multi-layer structure wherein an initial

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titanium film is deposited on a glass substrate and receives subsequent deposits of oxide films (column 1, lines 16-19, column 3, lines 12-35 and column 5, lines 8-35) resulting in a corrosion resistant article (column 3, lines 12-18). Depauw does not specifically mention that the metal film is amorphous, but Khanna discloses that an amorphous metal film coated on a glass substrate provides high corrosion resistance (column 1, lines 64-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an amorphous metal film, as disclosed by Khanna, for the metal film of Depauw, because the amorphous metal film provides a glass article devoid of microstructure such as columns, voids, pinholes, etc. and is homogeneous, uniform, dense and exhibits a smooth mirror-like surface finish (column 1, lines 12-18) while improving corrosion resistance.

It is the examiner's position that the coated product of Depauw in view of Khanna is identical to or only slightly different than the claimed coated product prepared by the method of the claim(s). Even though product-by-process claims are limited by and defined by the process, determination of patentability is based on the product itself. The patentability of a product does not depend on its method of production. If the product in the product-by-process claim is the same as or obvious from a product of the prior art, the claim is unpatentable even though the prior product was made by a different process. *In re Thorpe*, 227 USPQ 964, 966 (Fed. Cir. 1985). The burden has been shifted to the applicant to show obvious difference between the claimed product and the prior art product. *In re Marosi*, 218 USPQ 289 (Fed. Cir. 1983). Depauw in view of Khanna either anticipated or strongly suggested the claimed subject matter. It is noted that if the applicant intends to rely on Examples in the specification or in a submitted declaration to show non-obviousness, the applicant should clearly state how the Examples of the

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present invention are commensurate in scope with the claims and how the Comparative

Examples are commensurate in scope with Depauw in view of Khanna.

Regarding claims 22-24, 32, 40-43, Depauw discloses that the metal of the metal film may be titanium (column 3, lines 19-35).

Regarding claim 25, Depauw discloses that the thickness of the metal film is preferably in the range of 20-150 Å (column 8, lines 10-28).

Regarding claim 26, Depauw discloses that the thickness of the metal film is preferably in the range of 20-150 Å (column 8, lines 10-28), but does not specifically mention the use of a metal film with a thickness greater than 150Å. Depauw does disclose that the thickness of the layers must be chosen relative to the thickness of the silver layer and zinc oxide layers and relative to each other so as to determine the combined optical path which gives the desired optical appearance to the coated substrate (column 7, lines 60-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the thicknesses, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 27-28, 31, 43, Depauw discloses that the reactive gas may be oxygen (column 2, lines 56-63).

Regarding claims 29-30, 43, Depauw discloses that the inert gas may be argon (column 2, lines 56-63).

Regarding claims 32, 35, 40, 43, Depauw discloses that the substrate may be glass (column 1, lines 16-27).

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Regarding claims 33-34, Depauw discloses that the metal may be deposited in a sub-oxide or even metallic state (column 4, lines 67-68 and column 5, lines 1-7), but does not mention the specific oxygen content. Considering that the metal film may be deposited in sub-oxide or metallic state, it appears that the oxygen content is sufficiently low to effect the deposition in a substantially amorphous rather than crystalline state. Absent a showing of otherwise, it appears that the oxygen content ranges from 2 to 15 percent. In the event that it is shown that Depauw does not disclose the use of 2 to 15 percent oxygen, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the amount of oxygen, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claim 36, 43, Depauw discloses that the metal film is thermally oxidized (column 5, lines 3-7 and column 8, lines 10-28).

Regarding claim 37, Depauw does not disclose the specific heat treatment temperature, but considering that Depauw discloses that the glass is heated for a bending treatment and/or tempering treatment, it appears that the article is heated to a temperature of at least 400C. In the event that it is shown that Depauw does not perform a heat treatment step of at least 400C, it would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the temperature of the heat treatment to a temperature of at least 400C, because different coated glass article applications call for different heat treatment steps. It has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

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Regarding claim 38, Depauw discloses that an oxide film is deposited on the metal film prior to thermal oxidation of the metal film (column 5, lines 8-35).

Regarding claim 39, Depauw discloses that the titanium oxide film preferably has a thickness ranging from 20-140Å (column 8, lines 37-41). Depauw also discloses that the thickness of the layers must be chosen relative to the thickness of the silver layer and zinc oxide layers and relative to each other so as to determine the combined optical path which gives the desired optical appearance to the coated substrate (column 7, lines 60-66). It would have been obvious to one having ordinary skill in the art at the time the invention was made to adjust the thicknesses, since it has been held that discovering an optimum value of a result effective variable involves only routine skill in the art. *In re Boesch*, 617 F.2d 272, 205 USPQ 215 (CCPA 1980).

Regarding claims 40-43, Depauw discloses that the metal oxide film may comprise titanium (column 5, lines 8-20). Considering that Depauw discloses that the metal may be deposited in a sub-oxide or even metallic state (column 4, lines 67-68 and column 5, lines 1-7), it appears that the oxygen content is sufficiently low (in an essentially nonreactive atmosphere) to form a metal oxide film with a density of 4 grams/cc. Depauw also fails to mention the refractive index of the metal oxide film, but considering the substantially identical method of making the film, compared to the applicants' method, it appears that the metal oxide film would possess a refractive index of 2.5.

Patent and Trademark Office can require applicants to prove that prior art products do not necessarily or inherently possess characteristics of claimed products where claimed and prior art products are identical or substantially identical, or are produced by identical or substantially

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identical processes; burden of proof is on applicants where rejection based on inherency under 35 U.S.C. § 102 or on prima facie obviousness under 35 U.S.C. § 103, jointly or alternatively, and Patent and Trademark Office's inability to manufacture products or to obtain and compare prior art products evidences fairness of this rejection, *In re Best, Bolton, and Shaw*, 195 USPQ 431 (CCPA 1977).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Andrew Piziali whose telephone number is (703) 306-0145 and whose fax number is (703) 746-7037. The examiner can normally be reached Monday-Friday (8:00-4:30).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Deborah Jones can be reached at (703) 308-3822. The fax numbers for the organization where this application or proceeding is assigned are (703) 872-9310 for regular communications and (703) 872-9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 306-5665.


atp

June 10, 2002


DEBORAH JONES
SUPERVISORY PATENT EXAMINER